



UDC 2500 Application Note

Input 1 Set Up Group

Introduction

This data deals with various parameters required to configure Input 1.

Function Prompts

Table Error! No text of specified style in document.-1 INPUT 1 Group (Numeric Code 600) Function Prompts

Function Prompt Lower Display		Selection or Range of Setting Upper Display		Parameter Definition
English	Numeri c Code	English	Numeri c Code	
IN1TYP	601			INPUT 1 ACTUATION TYPE – This selection determines what actuation you are going to use for Input 1.
		B	1	B —B Thermocouple
		E H	2	E H —E Thermocouple High
		E L	3	E L —E Thermocouple Low
		J H	4	J H —J Thermocouple High
		J M	5	J M —J Thermocouple Med
		J L	6	J L —J Thermocouple Low
		K H	7	K H —K Thermocouple High
		K M	8	K M —K Thermocouple Med
		K L	9	K L —K Thermocouple Low
		NNMH	10	NNMH —Ni-Ni-Moly Thermocouple High
		NNML	11	NNML —Ni-Ni-Moly Thermocouple Low
		NICH	12	NICH —Nicrosil-Nisil Thermocouple High
		NICL	13	NICL —Nicrosil-Nisil Thermocouple Low
		R	14	R —R Thermocouple
		S	15	S —S Thermocouple
		T H	16	T H —T Thermocouple High
		T L	17	T L —T Thermocouple Low
		W H	18	W H —W5W26 Thermocouple High
		W L	19	W L —W5W26 Thermocouple Low
		100H	20	100H —100 Ohm RTD High
		100L	21	100L —100 Ohm RTD Low
		200	22	200 —200 Ohm RTD
		500	23	500 —500 Ohm RTD
		RADH	24	RADH —Radiamatic RH
		RADI	25	RADI —Radiamatic RI
		0-20	26	0-20 —0 to 20 Milliampers
		4-20	27	4-20 —4 to 20 Milliampers
		10m	28	10m —0 to 10 Millivolts
		50m	29	50m —0 to 50 Millivolts
		100m		100m —0 to 100 Millivolts
		0-5		0-5 —0 to 5 Volts
		1-5		1-5 —1 to 5 Volts
		0-10		0-10 —0 to 10 Volts
		TDIF		TDIF —Thermocouple Differential. (The millivolt values for the Thermocouple Differential Input are for a



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English	Numeri c Code	English	Numeri c Code	
			30 31 32 33 34	pair of J thermocouples at an ambient temperature mean of 450°F / 232°C.)
XMITR1	602	B E H E L J H J M J L K H K M K L NNMH NNML NICH NICL R S T H T L W H W L 100H 100L 200 500 RADH RADI LIN SrT	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26	<p>TRANSMITTER CHARACTERIZATION— This selection lets you instruct the controller to characterize a linear input to represent a non-linear one. If characterization is performed by the transmitter itself, then select LIN (Linear).</p> <p>ATTENTION Prompt only appears when a linear actuation is selected at prompt IN1 TYPE.</p> <p>FOR EXAMPLE: If input 1 is a 4 to 20 mA signal, but the signal represents a type K H thermocouple, then configure K H and the controller will characterize the 4 to 20 mA signal so that it is treated as a type K thermocouple input (high range).</p> <p>Parameter definitions are the same as in IN1 TYPE.</p>
IN1 HI	603	–999 to 9999 floating in engineering units		<p>INPUT 1 HIGH RANGE VALUE in engineering units is displayed for all inputs but can only be configured for linear or square root transmitter characterization.</p> <p>Scale the #1 input signal to the display value you want for 100 %</p>



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English	Numeri c Code	English	Numeri c Code	
				<p>you want for 100 %.</p> <p>EXAMPLE: Process Variable = Flow Range of Flow = 0 to 250 Liters/Minute Actuation (Input 1) = 4 to 20 mA Characterization (XMITTER) = LINEAR Set IN1 HI display value to 250 Set IN1 LO display value to 0 Then 20 mA = 250 Liters/Minute and 4 mA = 0 Liters/Minute</p> <p>ATTENTION The control setpoint will be limited by the range of units selected here.</p>
IN1 LO	604	-999 to 9999 floating in engineering units		<p>INPUT 1 LOW RANGE VALUE in engineering units is displayed for all inputs but can only be configured for linear or square root transmitter characterization. Scale the #1 input signal to the display value you want for 0 %. See example above.</p> <p>ATTENTION The control setpoint for Input 1 will be limited by the range of units selected here.</p>
RATIO1	605	-20.0 to 20.0		<p>RATIO ON INPUT 1—Select the Ratio value you want on Input 1.</p>
BIAS 1	606	-999 to 9999		<p>BIAS ON INPUT 1 — Bias is used to compensate the input for drift of an input value due to deterioration of a sensor, or some other cause. Select the bias value you want on Input 1.</p>
FILTR1	607	0 to 120 seconds 0 = No Filter		<p>FILTER FOR INPUT 1—A software digital filter is provided for Input 1 to smooth the input signal. You can configure the first order lag time constant from 1 to 120 seconds. If you do not want filtering, enter 0.</p>
BRNOUT	608	NONE	0	<p>BURNOUT PROTECTION (SENSOR BREAK) provides most input types with upscale or downscale protection if the input fails.</p> <p>NO BURNOUT—Pre-configured Failsafe output (selected in the CONTROL Set up Group) applied if failed input is detected (does not apply for an input out of range). Diagnostic message IN1 FAIL is</p>



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		UP	1	<p>intermittently flashed on the lower display.</p> <p>UPSCALE BURNOUT will force the Input 1 signal to the full scale value when the sensor fails. Diagnostic message IN1 FAIL intermittently flashed on the lower display.</p> <p>The controller remains in Automatic control mode and adjusts the controller output signal in response to the full scale Input 1 signal developed by the Burnout circuitry.</p>
		DOWN	2	<p>DOWNSCALE BURNOUT will force the Input 1 signal to the lower range value when the sensor fails. Diagnostic message IN1 FAIL intermittently flashed on the lower display.</p> <p>The controller remains in Automatic control mode and adjusts the controller output signal in response to the lower range Input 1 signal developed by the Burnout circuitry.</p>
		NOFS	3	<p>NO FAILSAFE— This selection does not provide input failure detection and should only be used when an absolute accuracy is the most important criteria or when a thermocouple input is connected to another instrument which supplies the Burnout current. (For this selection, no burnout signal is sent to the sensor.)</p> <p>ATTENTION For Burnout to function properly on a 0-20 mA input type (or a 0-5V type that uses a dropping resistor), the dropping resistor must be remotely located (across the transmitter terminals). Otherwise, the input at the UDC terminals will always be 0 mA (i.e., within the normal operating range) when the 0-20 mA line is opened.</p>
EMISS	609	0.01 to 1.00		<p>EMISSIVITY is a correction factor applied to the Radiamatic input signal that is the ratio of the actual energy emitted from the target to the energy which would be emitted if the target were a perfect radiator. Available only for Radiamatic inputs.</p>